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| EXAMINER | |
|---|---|
| EDWARDS, PATRICK L | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2621 | 10 |

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Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/774,013 | SONODA, FUMIHIRO | |
| | Examiner | Art Unit | |
| | Patrick L Edwards | 2621 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *24 May 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

1. The response received on May 24, 2004 has been placed in the file and was considered by the examiner. An action on the merits follows.

### *Response to Arguments*

2. The applicant's arguments, filed on May 24 2004, have been fully considered. A response to these arguments is provided below.

### 35 USC 112 – 2nd Paragraph Rejections

*Summary of Argument:* The applicant traverses all of the 112 – 2nd paragraph rejections. The applicant argues that the language in all of the cited phrases is clear as currently recited.

*Examiner's Response:* With regard to the claims 1 and 7, the applicant's arguments have been fully considered but are not persuasive. The phrase "reading a defective image as information related to a defect on the film", is unclear as currently recited. The indefiniteness of this phrase stems from its awkward wording and can be easily corrected by simply rewording the phrase. For example, a phrase which recited 'reading a defective image to provide information regarding defects on a film' would be much clearer than the currently recited phrase.

With regard to claims 2 and 11, the applicant's arguments have been fully considered but are not persuasive. The phrase "preprocessing is finished up to completion of obtaining said actual image", is unclear as currently recited. The indefiniteness of this phrase stems from its awkward wording and can be easily correct by simply rewording the phrase. For example, a phrase which recited that 'preprocessing is finished by the time the actual image is obtained' would be much clearer than the currently recited phrase.

With regard to claims 4 and 10, the applicant's arguments are persuasive. The initial grounds of rejection regarding the language used in claims 4 and 10 is hereby withdrawn. However, claims 4 and 10 still stand rejected under 35 USC 112- 2nd paragraph, as being dependent on indefinite claims.

With regard to claims 5 and 8, the applicant's arguments have been fully considered but are not persuasive. The phrase "imparts presence or absence of the defect", is unclear as currently recited. The indefiniteness of this phrase stems from its awkward wording and can be easily correct by simply rewording the phrase. For example, a phrase which recited that 'flag information, which indicates the presence or absence of a defect on a pixel unit basis, from the defective image' would be much clearer than the currently recited phrase.

### Prior Art Rejections

*Summary of Argument:* Claims 7-10 stand rejected under 35 USC 102(b) as being anticipated by Edgar(1) (USPN 5,266,805). The applicant traverses this rejection and argues that Edgar(1) fails to disclose that the blemish elimination processing is based on the preprocessing of a defective image (applicant's remarks in the 1st three paragraphs of pg. 11). Additionally, the applicant argues that the Edgar(1) reference fails to disclose the ordering of

the claim 7 method (pg. 11 final paragraph). More specifically, the applicant argues that Edgar(1) fails to disclose "reading the defect information of the film and performing preprocessing, then obtaining the actual images".

*Examiner's Response:* The applicant's arguments have been fully considered but are not persuasive. The original rejection stated that the determination of 'a map of imperfections' as disclosed in Edgar(1) (col. 4 lines 26-29) is analogous to preprocessing as recited in the claim. This statement is supported by paragraph [0063] of the applicant's specification, which is provided in italics below.

> *It should be noted that, in the present embodiment, the edge enhancement processing is performed as an example of preprocessing; however, the present invention is not limited to the above-described way and any preprocessing is permissible as long as it specifies the position or degree of the defective portion in the defective image.*

It follows that the 'map of imperfections' disclosed in Edgar(1) specifies the position of the defective portion in the defective image. Consequently, this 'map of imperfections' qualifies as the "preprocessing" recited in the claim.

With regard to the applicant's additional argument that the ordering of the claim 7 method is not disclosed in the Edgar(1) reference, it should be pointed out that claim 7 does not recite any limitations related to the ordering of the method. Specifically, the applicant states that Edgar(1) fails to teach "reading the defect information of the film and performing preprocessing, then obtaining actual images", but this language is not actually recited in the claim.

*Summary of Argument:* Claims 1-6 and 11 stand as being unpatentable over Edgar(1) in view of Edgar(2) and Edgar(3). The applicant traverses these rejections and argues that the three references teach away from the present invention. More specifically, the applicant argues that since the references disclose obtaining a defective image and an actual image prior to the blemish elimination processing, that these references teach away from the present invention (see pg. 12 of applicant's remarks)

*Examiner's Response:* The applicant's arguments have been fully considered but are not persuasive. The applicant states that the Edgar references teach away from the present invention because they disclose obtaining a defective image and an actual image prior to the blemish elimination processing. However, claim 1 explicitly recites performing blemish elimination processing on an actual image (which has already been obtained) by using a defective image (which has already been obtained). Consequently, we can conclude that this aspect of the Edgar references is not different from the claimed invention and therefore does not teach away from the present invention.

*Summary of Argument:* The applicant traverses the claim 1 rejection and argues that Edgar(3) fails to disclose performing preprocessing for blemish elimination while photoelectrically reading the image (see pg. 13 of applicant's remarks).

*Examiner's Response:* The applicant's arguments have been fully considered but are not persuasive. The Edgar(3) reference discloses a preprocessing operation (i.e. the determination of the upper and lower bound as discussed in col. 4 lines 31-48 of Edgar(3) in conjunction with Figure 6) which is performed in parallel with the acquisition of the visible image 622 as shown in Figure 6. Lines 23-25 in column 3 of the Edgar(3) reference recite that the visible image 622 is acquired by means of a scanning operation. The process of photoelectrically reading an image (as recited in the claim) is inherent in a scanning operation (which is disclosed in Edgar(3)).

In Figure 6 and the accompanying description, the Edgar(3) reference further discloses that the subtractor function block 602 has 3 inputs. It takes in a pixel from the visible image 622, and the estimated upper and lower bound for that pixel from the aforesaid preprocessing operation. As has been stated above, the visible image 622 is acquired through a scanning operation. It is well known in the art that an image scanner scans in an one pixel at a time. Since the subtractor function block 602 receives one pixel at a time from the visible image 622 and the output from preprocessing operation, we can conclude that the preprocessing operation and the scanning operation (i.e. the photoelectric reading of an image) are performed simultaneously.

## Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-11 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to claims 1 and 7, the phrase "reading a defective image as information related to a defect on the film" is unclear as currently recited. The wording of this phrase is confusing and unclear. Appropriate correction is required.

With regard to claims 2 and 11, the phrase "preprocessing is finished up to completion of obtaining said actual image" is unclear as currently recited. The wording of this phrase is confusing and unclear. Appropriate correction is required

With regard to claims 5 and 8, the phrase "imparts presence or absence of the defect" is unclear as currently recited. The wording of this phrase is confusing and unclear. Appropriate correction is required.

Claims 3-4, 6 and 9-10 are rejected because they are dependent on indefinite claims.

## *Claim Rejections - 35 USC § 102*

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Edgar(1) (US Patent 5,266,805). With regard to claim 7, Edgar(1) discloses reading a defective image as information related to a defect on the film (Edgar(1) column 3 line 67 – column 4 line 3). The infrared image as disclosed in Edgar(1) is analogous to a defective image as recited in the claim (Edgar(1) column 5 lines 58-61 in conjunction with Figure 1). Edgar(1) further discloses performing preprocessing for the blemish elimination processing on the the defective image (Edgar(1) column 4 lines 26-29). The determination of the map of imperfections as disclosed in Edgar(1), which shows the exact shape and location of various imperfections on the film (Edgar(1) column 5 lines 38-40) is analogous to preprocessing of the defective image as recited in the claim. Edgar(1) further discloses performing blemish elimination processing on a blemish of the actual image, based on the defective image subjected to preprocessing (Edgar(1) column 6 lines 52-58).

With regard to claim 8, Edgar(1) discloses producing flag information which imparts presence or absence of the defect on a pixel unit basis from the defective image (Edgar(1) column 8 line 66 – column 9 line 8). The recording of whether or not a pixel location is obscured by an imperfection as disclosed in Edgar(1) is analogous to the production of flag information as recited in the claim.

With regard to claim 9, Edgar(1) discloses that the defective image is photoelectrically read by using infrared light (Edgar(1) column 4 lines 23-26).

With regard to claim 10, Edgar(1) discloses that the defective image is evaluated to obtain an evaluated result (Edgar(1) column 4 lines 26-29). The map of imperfections from the infrared image as disclosed in Edgar(1) is analogous to the evaluated result as recited in the claim. With respect to the further limitation recited in the claim that preprocessing and blemish elimination processing are stopped in accordance with the evaluated result, Edgar(1) discloses that the map of imperfections, which is derived from the infrared image, is used in the blemish elimination processing (Edgar(1) column 6 lines 39-58). Since the map of imperfections, which is analogous to the evaluated result as recited in the claim, is used to perform the blemish elimination processing, it follows that the preprocessing and blemish elimination processing are stopped in accordance with the evaluated result. Therefore, this further limitation is inherent in the teaching of Edgar(1).

With regard to claim 13, Edgar(1) further discloses that, following the blemish elimination processing, the actual image is an image without blemishes (col. 2 lines 64-68).

### *Claim Rejections - 35 USC § 103*

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-6, 11-12 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edgar(1) as applied to claim 7, and further in view of Edgar(2) (US Patent Application Publication 2001/0031144) and Edgar(3) (US Patent 6,393,160 B1). The arguments as to the relevance of Edgar(1) as applied iabove are incorporated herein.

With regard to claim 1, Edgar(1) further discloses photoelectrically reading said image to obtain an actual image (Edgar(1) column 3 lines 47-57). The image comprised of red, green and blue light portions as disclosed in Edgar(1) is analogous to the actual image as recited in the claim. Edgar(1) does not expressly disclose reading a defective image before reading the actual image. Edgar(1) also fails to expressly disclose that the preprocessing of the defective image and the reading of the actual image are performed simultaneously. Edgar(2), however, discloses reading the defective image and then reading the actual image (Edgar(2) paragraph 0022 lines 9-12). The data corresponding to the infrared light as disclosed in Edgar(2) is analogous to the defective image as recited in the claim. The data corresponding to the visible light as disclosed in Edgar(2) is analogous to the actual image as recited in the claim. Edgar(3) discloses simultaneously preprocessing the defective image and reading the actual image (Edgar(3) column 4 lines 31–48). The determination of upper and lower bounds for an infrared image as disclosed in Edgar(3) is analogous to preprocessing as recited in the claim. The visible image as disclosed in Edgar(3) is analogous to the actual image as recited in the claim.

It would have been obvious to one reasonably skilled in the art at the time of the invention to combine reading the defective image before reading the actual image as taught by Edgar(2) and simultaneously preprocessing the defective image and reading the actual image as taught by Edgar(3) with Edgar(1)'s blemish elimination system. Such a modification would have made for a system that could correct blemishes of an image while the image was being read. Additionally, this modification is suggested in the Edgar(1) reference (col. 15 lines 51-54) with the statement that the operations could be performed serially or in parallel. Adding the capability of parallel processing to Edgar(1) would have allowed for a faster, more efficient system that required less storage and was consequently less expensive.

With regard to claim 2, which recites the further limitation that preprocessing is finished up to completion of obtaining the actual image, Edgar(3) discloses that the preprocessing of the defective image and the acquisition of the actual image are performed simultaneously (Edgar(3) column 4 lines 31-48). It follows that the preprocessing would be finished up to the completion of the actual image. Therefore, the further limitation of claim 2 is inherent in the teaching of Edgar(3).

With regard to claim 3, Figure 2 of Edgar(1) shows film being read sequentially on a plane basis. In addition, Edgar(1) discloses that the actual image is obtained and the blemish elimination processing is performed on the actual image by using said defective image subjected to said processing (Edgar(1) column 6 lines 52-58).

With regard to claim 4, Edgar(1) discloses that the defective image is evaluated to obtain an evaluated result (Edgar(1) column 4 lines 26-29). The map of imperfections from the infrared image as disclosed in Edgar(1) is analogous to the evaluated result as recited in the claim. With respect to the further limitation recited in the claim

that preprocessing and blemish elimination processing are stopped in accordance with the evaluated result, Edgar(1) discloses that the map of imperfections, which is derived from the infrared image, is used in the blemish elimination processing (Edgar(1) column 6 lines 39-58). Since the map of imperfections, which is analogous to the evaluated result as recited in the claim, is used to perform the blemish elimination processing, it follows that the preprocessing and blemish elimination processing are stopped in accordance with the evaluated result. Therefore, this further limitation is inherent in the teaching of Edgar(1).

With regard to claim 5, Edgar(1) discloses producing flag information which imparts presence or absence of the defect on a pixel unit basis from the defective image (Edgar(1) column 8 line 66 – column 9 line 8). The recording of whether or not a pixel location is obscured by an imperfection as disclosed in Edgar(1) is analogous to the production of flag information as recited in the claim.

With regard to claim 6, Edgar(1) discloses that the defective image is photoelectrically read by using infrared light (Edgar(1) column 4 lines 23-26).

With regard to claim 11, all of the limitations of the claim have been previously addressed in the above argument with respect to claim 2.

With regard to claim 12, Edgar(1) further discloses that, following the blemish elimination processing, the actual image is an image without blemishes (col. 2 lines 64-68).

With regard to claims 15 and 16, the limitation that preprocessing is performed while (or 'during') the image is being scanned by visible light is discussed above with respect to claim 1. The scanning of the visible image 622 as disclosed in Edgar(3) qualifies as the claimed 'fine' scanning operation.

With regard to claim 17, Edgar(1) further discloses that the evaluated result is a result on whether image data which is smaller than a given threshold value, is present before performing the processing (col. 9 lines 13-21 with Figure 4). The predetermined value disclosed in Edgar(1) is analogous to the claimed 'threshold value'.

With regard to claim 18, Edgar(1) further discloses that if a value of a defect in the defective image does not meet the threshold value then the blemish elimination processing is not needed and the defective image is therefore not subjected to preprocessing (Edgar(1) col. 9 lines 34-39 in conjunction with Figure 4). Figure 4 of Edgar(1) shows that the pixels which are marked as "obscured" are considered to be imperfections and are subjected to the appropriate fill-in routines (col. 8 line 66 – col. 9 line 9). Those that are not 'obscured' are not subjected to this preprocessing.

With regard to claim 20, Edgar(2) further disclsoes performing preprocessing for the blemish elimination processing before photoelectrically reading the image to obtain the actual image (Edgar(2) Figure 6). Element 640 of Figure 6 in Edgar(2) shows that optical data is collected on the defective image (i.e the infrared image) prior to the scanning of the visible image (i.e. the actual image), which is shown in elements 650 and 660. This optical data collection disclosed in Edgar(2) (which determines the size and location of image defects (see Edgar(2) paragraph [0043] lines 11-13)) qualifies as 'preprocessing' as recited in the claim. It would have been obvious to one reasonably skilled in the art at the time of the invention to modify Edgar(1)'s image processing method by performing preprocessing on the defective image before reading the actual image as taught by Edgar(2). Such a

modification would have allowed for a method which provided a clearer more definite image (Edgar(2) paragraph [0043] lines 28-30).

Claims 14 and 19 further limit the edge enhancement processing recited in claim 5. However, the edge enhancement processing limitation of claim 5 does not have to be met in order for the claim to be anticipated, since it is one of two limitations recited in the "OR" format (see the above claim 5 argument). Consequently, the further limitations recited in claims 14 and 19 are considered moot. If the applicant wishes to get the edge enhancement limitations examined, then he is invited to add (a) claim(s) which recites only the edge enhancement limitation.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick L Edwards whose telephone number is (703) 305-6301. The examiner can normally be reached on 8:30am - 5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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